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PATENT APPLICATION
ATTORNEY DOCKET NO. 10014091-1

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OCT 24 2005

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Huitao Luo

Confirmation No.: 6419

Application No.: 10/046,797

Examiner: A. Richer

Filing Date: 1/14/2002

Group Art Unit: 2676

Title: Systems and Methods for Processing Boundary Information of a Graphical Object

Mail Stop Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF REPLY BRIEF

Sir:

Transmitted herewith is the Reply Brief with respect to the Examiner's Answer mailed on August 24, 2005. This Reply Brief is being filed pursuant to 37 CFR ~~1.133(b)~~ 41.4 within two months of the date of the Examiner's Answer.

(Note: Extensions of time are not allowed under 37 CFR 1.136(a))

(Note: Failure to file a Reply Brief will result in dismissal of the Appeal as to the claims made subject to an expressly stated new grounds of rejection.)

No fee is required for filing of this Reply Brief.

If any fees are required please charge Deposit Account 08-2025.

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Number of pages: 12

Typed Name: Natalie King

Signature: 

Respectfully submitted,

Huitao Luo

By 

James D. Shaurette

Attorney/Agent for Applicant(s)

Reg. No. 39,833

Date: 10/24/05

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10/24/05Typed Name of Person Mailing Paper or Fee: Natalie KingSignature: **PATENT APPLICATION**
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IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S): Huitao Luo**SERIAL NO.:** 10/046,797**GROUP ART UNIT:** 2676**FILED:** January 14, 2002**EXAMINER:** A. Richer**SUBJECT:** Systems and Methods for Processing Boundary Information of a Graphical Object

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REPLY BRIEF UNDER 37 C.F.R. §41.41

SIR:

Referring to the Status of Claims section (3) on page 2 of the Examiner's Answer, Appellant appreciates the recognition of patentable subject matter inasmuch as claims 6 and 15 are indicated to recite allowable subject matter.

Referring to the Grouping of Claims section (7) on page 3 of the Examiner's Answer, Appellant respectfully submits the claims do not stand or fall together. In particular, the undersigned and the Examiner discussed the replacement of 37 CFR 1.192(c)(7) with the new rules of appellate procedure at 37 CFR §41 *et. seq.* which do not require the statement. In addition, rule 41.37(c)(vii) states that each ground of rejection must be treated under a separate heading as provided in Appellant's

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original brief and any claim argued separately should be placed under a subheading identifying the claim by number as provided in Appellant's original brief. Claims argued as a group should be placed under a subheading identifying the claims by number as provided in Appellant's original brief. In a telephone conference, the Examiner agreed with the undersigned and the pending claims do not stand or fall together as asserted in the Examiner's Answer.

For at least the reasons presented in the Brief of Appellant and the arguments provided below, Appellant respectfully requests reversal of the rejections of the claims and allowance of all pending claims.

Referring to section VII. A of the Brief of Appellant, there is no motivation to combine the teachings of U.S. Patent No. 5,974,175 to Suzuki (hereinafter "Suzuki") with the teachings of U.S. Patent No. 5,774,595 to Kim (hereinafter "Kim") in support of the 103 rejection of claims 1-19, 25-30 and 33-36 and the Office has failed to establish a *prima facie* 103 rejection for at least this reason.

Kim discloses a video encoder directed towards encoding image data of *entire frames of video* to compress the image data of the frames to transmit image data using devices of limited bandwidth as set forth in col. 1, lines 17+ of Kim. Appellant has failed to uncover any teachings that Kim is concerned with selection, extraction and/or user editing of objects appearing frames of a video. Kim already discloses an improved contour detection method for use in a video signal encoder per col. 1, lines 65 – col. 2, line 2 of Kim. There is *no objective evidence of record that the contour identification method of Suzuki provides any benefits or improvements to the contour approximation system of Kim to motivate one to combine the reference teachings*. The user input of Suzuki is for identification of an object to be extracted responsive to user selection (Suzuki at col. 5, lines 53+) and *is not disclosed as providing any improved performance to the fitting of contours* which would motivate one to modify Kim to accommodate the user input teachings of Suzuki. To the contrary of being directed towards improved encoding of video frames, the *user input of Suzuki merely enables an operator to identify the object of interest to be extracted*. Inasmuch as Kim is not concerned with selection of objects but rather encoding entire frames, there is no motivation to combine the user input teachings of Suzuki for object extraction with the video encoding system of Kim. Kim already provides an improved contour detection method and there is

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no evidence of record that any improved system or method would result from the combination of references to motivate one to combine the references as proposed by the Office.

Referring to pages 4-5 of the Examiner's Answer, the fact that Kim and Suzuki may be found "similarly classified" or that at least some teachings thereof are similar are not sufficient for proper motivation to combine the reference teachings. Additionally, the statement that the combination of references "would be technically possible" is insufficient. Applicants are not arguing non-analogous subject matter but lack of motivation and the similar classification of references or fact that modifications may be possible fails to establish proper motivation to combine the references absent a desirability or impetus for one of skill in the art to combine the teachings of the references. In particular, the fact that references may be combined is insufficient if there is no motivation to combine the reference teachings. MPEP §2143.01 (8th ed., rev. 2) *citing In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

As set forth in the Appeal Brief, the Examiner bears the initial burden to factually support a suggestion of the desirability of what the inventor has done. Appellant respectfully submits this burden has not been met and one would not be motivated or have a desire to combine reference teachings where there is no objective evidence of an improvement or benefit from the combination, Kim already discloses an improved contour detection method rendering the teachings of Suzuki redundant and irrelevant, and the teachings of Suzuki regarding user input for objection identification and extraction are of no concern to the encoder system of Kim configured to encode entire frames of video.

Referring to page 5 of the Examiner's Answer, even if Suzuki identifies an object automatically after the initial user input, there is still no motivation to combine the reference teachings of Suzuki regarding user interaction for identifying objects per col. 5, lines 53+ where the identification of an object responsive to user input is of no concern to Kim concerned with encoding entire frames.

Applicants also submit the statement on page 6 of the Examiner Answer that Kim alone would be sufficient to anticipate Appellant's invention is erroneous. More specifically, regarding the automatic versus manual process argument, Kim is directed towards entirely different subject matter of encoding entire frames of video

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as opposed to systems and methods which interact with a user for processing boundary information of a graphical object. The differences between the claimed subject matter and Kim are not merely making a process automatic versus manual but are entirely different systems including video encoding of Kim wherein user input is of no use and the claimed user interactive arrangements.

Referring to page 6 of the Examiner's Answer regarding teachings for extraction of a desired object of Suzuki, Appellant submits the teachings are irrelevant to the video encoder of Kim. There is no objective evidence of record that object extraction responsive to user identification of Suzuki combined with the Kim teachings of encoding entire frames of video results in a system or method of any benefit or improvement. Kim is not concerned with object identification for extraction because entire frames are encoded. It is non-sensical to modify Kim per the teachings of Suzuki when there is no benefit provided to the system of Kim concerned with encoding entire frames and not concerned with extraction of objects of which the teachings to be combined are directed. The alleged deficiency of Kim of not being able to select a single object for extraction on page 6 of the *Action is not a disadvantage because Kim is not concerned with extraction of an object but rather encoding of entire frames*. The fabrication of an alleged deficiency of Kim for which Suzuki allegedly provides a solution as providing motivation to combine the reference teachings is improper and illustrates the inappropriateness of the obviousness rejection.

Appellant respectfully submits there is no objective evidence of record to combine the reference teachings and the Office has failed to establish a proper prima 103 rejection. Appellant respectfully requests reversal of the rejection of the claims for at least these reasons and the reasons set forth in section VII. A of the Brief of Appellant.

Referring to section VII. B of the Brief of Appellant, Appellant respectfully submits one of skill in the art concerned with the problems of Kim regarding encoding entire frames of video would not look to combine the reference teachings of Suzuki and the complexities associated therewith and the combination may frustrate or destroy the purpose of the primary reference being modified yielding a user interactive video encoder with no improvement or benefit provided. The fact the Suzuki automatically identifies the user selected object at subsequent moments

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of time in subsequent frames is irrelevant inasmuch as Kim is not concerned with extraction or identification of objects but rather the encoding of entire video frames.

Further, the Office alleges that the Kim invention would "still achieve its purpose of video encoding." Appellant respectfully disagrees inasmuch as Kim as modified per Suzuki would involve *encoding of an object selected by a user* as opposed to encoding entire frames of video which is the purpose of Kim in the first instance. Merely encoding an object of a frame is detrimental to Kim and would defeat the aim of Kim of compressing entire frames for reducing bandwidth necessary for communications with no benefit afforded to the resultant system to make the combination in the first instance.

Appellant respectfully requests reversal of the rejection of the claims for at least these reasons and the reasons set forth in section VII. B of the Brief of Appellant.

Referring to the Examiner Answer addressing section VII. C of the Brief of Appellant, Appellant respectfully submits that Appellant traversed the reliance upon Official Notice in the Office Action mailed December 27, 2004 (hereinafter "Office Action") which stated that format changes are well-known. Now the Office submits evidence defining a data structure as an organization of information for *better algorithm efficiency*. Kim fails to disclose that the data which is converted is data of a data structure as defined in claim 12 and the evidence of the Office fails to support that such limitations are instantly and unquestionably well known in the art as specified by MPEP 2144.03A (8th ed., rev. 2). As set forth in the definition provided by the Office, any organization of data may not be fairly considered to disclose a "data structure." For example, data may be merely arranged in a file or otherwise made available for communication or processing with no specific ordering or arrangement and may not be fairly considered as a data structure for better algorithm efficiency (e.g., queue, stack, linked list, heap, dictionary, tree, or conceptual unity in the definition provided by the Office). The teachings of Kim are not disclosed as providing data which is encoded and converted in an arrangement of "better algorithm efficiency" or any arrangement which may be fairly considered as a data structure as claimed and understood in the art as demonstrated by the definition of "data structure" supplied by the Office on page 7 of the Examiner's Answer.

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The limitations of the claims are not well-known and the claims are allowable for these and the reasons set forth in section VII. C of the Brief of Appellant.

Referring to the Examiner Answer addressing section VII. D of the Brief of Appellant, Appellant respectfully submits the Office Action failed to identify teachings of the prior art which allegedly disclose or suggest the limitations of claim 33 reciting the *user interface configured to receive user input*. Now, after Appeal, the Office states that a user interface is inherent for the invention of Suzuki. However, Appellant has failed to uncover any user interaction in the system of the primary reference of the 103 rejection (i.e., Kim) being modified and it is not inherent to provide a user interface in Kim when Kim is not concerned with nor provides user interaction. To the contrary, suitable alternatives exist as evidenced by the video encoder of Kim operating without user input and accordingly not requiring a user interface. The reliance upon inherency is misplaced inasmuch as the claimed user interface does not *necessarily flow* from the teachings of Kim providing video encoding without user input as is required for proper reliance upon inherency. *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

Appellant respectfully requests reversal of the rejection of the claims for at least these reasons and the reasons set forth in section VII. D of the Brief of Appellant.

Referring to the Examiner Answer addressing section VII. E of the Brief of Appellant, the Office alleges that Appellant misinterpreted the rejection of claim 25 provided in the Office Action. Appellants disagree. The Office in the Office Action alleged that it was inherent that a different contour would require a different input. Appellant demonstrated in the Brief of Appellant that suitable alternative exist in the explicit teachings of Suzuki itself by providing the automatic identification of contours without different user input.

Now the Office states that the limitations are still allegedly inherent since if the invention of Suzuki were restarted a user would again have to manually select a new contour of the new image being processed when the invention of Suzuki is restarted. However, Appellant notes the claims specify *user input is different for individual ones of the contours and the plural contours for which different input is provided are contours of the same graphical image*. The need to interpret Suzuki as now processing different images to allegedly demonstrate the limitations of the

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claims are inherent is evidence of the erroneous nature of the rejection and the inappropriateness of reliance upon inherency.

Appellant respectfully requests reversal of the rejection of the claims for at least these reasons and the reasons set forth in section VII. E of the Brief of Appellant.

Referring to the Examiner Answer addressing section VII. F of the Brief of Appellant, the Office baldly states on page 10 that the examiner notes that Ikezawa provides an improvement over the Kim and Suzuki references ... in this case the ability to better process complicated shapes by allowing user editing as stated by col. 11, lines 61-63. However, there is no objective evidence of record that the alleged improvements *addressed by Ikezawa pertain to the processing provided by Kim or Suzuki*. Further, there is no objective evidence of record that the systems or algorithms which implement processing of Kim or Suzuki could be modified to accommodate the teachings of Ikezawa, or even if modified that any improvement would result to motivate one to make the combination in the first instance. The identification of generic teachings in Ikezawa only pertinent to the system of Ikezawa and have not been demonstrated to be of relevance to or provide benefits to Kim or Suzuki and accordingly fails to support proper motivation to combine the reference teachings.

Appellant respectfully requests reversal of the rejection of the claims for at least these reasons and the reasons set forth in section VII. F of the Brief of Appellant.

Referring to the Examiner Answer addressing section VII. G of the Brief of Appellant, the fact that references may be similarly classified or concerned with fitting contours is not sufficient to combine reference teachings inasmuch as the mere fact that references are combinable is not sufficient if there is no impetus or desirability for the combination. MPEP §2143.01.

Further with respect to the arguments provided on page 11 of the Examiner's Answer, Kim is directed towards *encoding entire frames*. The need for the Office to modify the purpose of Kim or fabricate new problems not addressed by or of concern to Kim to support a motivation to combine the teachings of Catros directed toward problems of no concern of Kim illustrates the inappropriateness of the 103 rejection. More specifically, the Office states that it may be desirable to fill in

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discontinuities if such exist. However, there is no objective evidence of record that Kim or Suzuki are concerned with or experience discontinuities. There is no objective evidence of record that the combination of reference teachings would provide a resultant device or method having improvements over the inventions of the references taken individually to motivate to combine the reference teachings. To modify the operations of the primary or secondary reference to solve a problem which is of no concern to the primary or secondary reference illustrates a lack motivation to combine the reference teachings and the tenuous nature of the rejection of the claims.

Appellant respectfully requests reversal of the rejection of the claims for at least these reasons and the reasons set forth in section VII. G of the Brief of Appellant.

Referring to the Examiner Answer addressing section VII. H of the Brief of Appellant, it appears the Office has misconstrued the nature of Appellant's argument in the Brief of Appellant with respect to claim 35. More specifically, the Office has the burden to establish motivation to combine reference teachings. Even if there is sufficient motivation to combine the references in support of the rejection of the base claim 12, there is no motivation to modify Kim to provide an ability to extract objects inasmuch as Kim is not concerned with extraction of objects but rather encoding of entire frames. The objective evidence of record fails to provide any improvements or benefits by modification of Kim to extract graphical information as defined in claim 35 and there is no logical reason to modify Kim as alleged by the Office. The motivation results from inappropriate hindsight reconstruction based upon Appellant's disclosure.

Appellant respectfully requests reversal of the rejection of the claims for at least these reasons and the reasons set forth in section VII. H of the Brief of Appellant.

Referring to the Examiner Answer addressing section VII. I of the Brief of Appellant, the Office goes at length to discuss the relationship of contours defining regions. However, there is no evidence that Catros concerned with bridging disjointed edges would be motivated to look to the Makram-Ebeid reference concerned with merging regions for meaningful teachings. There is no evidence of record that merging of regions would impart any benefit to the disclosure of Catros

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directed towards bridging disjointed edges. The mere fact that Makram-Ebeid may be concerned with contours and the fact that the same class and subclass were searched for both references is not sufficient to establish motivation to combine the reference teachings. Appellant is not stating that the Catros and Makram-Ebeid references are non-analogous art but that there is no motivation to combine the reference teachings. There is no objective evidence of record to support the conclusion of the Office on page 13 of the Action that application of the teachings of Makram-Ebeid to Catros would result in any improved system, that eliminating the largest possible number of *interfaces* to merge adjacent regions would eliminate a number of contours, or that even if such elimination occurred that Catros' goal of bridging contours would be made easier as baldly alleged. The motivational rationale presented by the Office is insufficient and not supported by the objective evidence of record.

Appellant respectfully requests reversal of the rejection of the claims for at least these reasons and the reasons set forth in section VII. I of the Brief of Appellant.

Referring to the Examiner Answer addressing section VII. J of the Brief of Appellant, Appellant respectfully submits the prior teachings fail to support the interpretations of the Office, the limitations of the claims are not disclosed even if the references are combined, and the claims are allowable for this reason and the reasons set forth in the Brief of Appellant. The Office on page 15 of the Examiner's Answer baldly states without reference to the prior art that an Energy function is minimized when two regions are merged or that intensity variance is also "likely at a minimum" since intensity variance is a key portion of Energy. The assertions by the Office are not supported by the objective teachings of the prior art.

Appellant respectfully requests reversal of the rejection of the claims for at least these reasons and the reasons set forth in section VII. J of the Brief of Appellant.

Referring to the Examiner Answer addressing section VII. K of the Brief of Appellant, Appellant respectfully the Office submits no objective evidence that Catros suffers from problems of "fully automatic segmentation of images" which are of concern in Luo. There is no evidence of record that modifying Catros to accommodate teachings of Luo would result in any benefit or improvement to

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motivate one to make the combination of references.

Appellant respectfully requests reversal of the rejection of the claims for at least these reasons and the reasons set forth in section VII. K of the Brief of Appellant.

Reversal of the rejections of the claims and allowance of the claims is respectfully requested for at least the reasons discussed herein and the reasons set forth in the Brief of Appellant.

Respectfully submitted,
Huitao Luo

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